

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

2001 FIRE SEASON OVERVIEW

The 2001 fire season had the potential to be as severe as the 2000 season. Winter and spring precipitation was well below normal (see table on page 2 and graphs on page 3). The anemic precipitation translated into well-below snow pack. Government Camp snow pack (see Figure 2 on page 4) statistics showed the peak depth occurred in late December then declined during most of January. A month-ending storm brought the snow pack back to 30 inches, but still below average (44 inches). The snow pack remained fairly steady in February. The peak depth was 36 inches early in the month, and again toward the middle of the month. By the end of February the snow depth had fallen to 26 inches (average is 45 inches).

A series of weather systems in early March brought the snow depth to 32 inches by the 10th. A mid-month warm spell caused the snow pack to dwindle from 26 inches on the 18th to 12 inches on the 19th. Surprisingly, by the 24th, there was no measurable snow on the ground. The average first "snow-free day" is June 19th. The average snow depth at the end of March is 41 inches!!

A wet mid-April allowed the snow pack to re-build. There were 24 inches on the ground on April 15. But, the snow was short-lived. By April 26th the two feet had melted. A few inches fell during the first few days of May, but on May 5th the snow was gone for good. The combination of well-below normal winter and spring precipitation and below normal snow pack set the stage for a potential "bad" season.

However, the 2001 fire season (in the Portland forecast area, not region-wide) was rather "average". The biggest (in my opinion) factor that prevented a widespread fire bust was the intermittent precipitation during the summer and early fall. The dry spell (defined as half the RAWs in a pre-determined area receiving one tenth of an inch of rain or more) was short. This was especially true for the east side. In fact, the 2001 "dry spell" for zone 610 was the shortest in the last four years (32 days). The average is 57 days. The longest "dry spell" in any of the six pre-determined areas was 32 days.

Another factor to consider was the lack of a significant heat wave. In general, the first three weeks of August were quite warm (this also coincided with the greatest lightning activity), but not record-breaking. The end of May was also quite warm, but this episode was followed by a major rain event.

Lightning activity is a major indicator of fire season severity. A look at the lightning statistics (**Table 2 on Page 6**) for 2001 shows no significant trends. The west side experienced below-average lightning activity, except for the South Cascade area (zones 606 and 608) where lightning action was normal. The east side experienced average lightning activity as well. There were three distinct lightning episodes: 1) July 9 through July 13, 2) August 9 through August 14, and 3) September 12 through September 16. The last event was rather unusual. Typically, the threat of significant lightning after September 1 is rather low.

The forecast district experienced six "major" fires during the 2001 season. A "major" fire is classified as 100 acres in forest fuels or 300 acres in range/grass fuels. Two fires occurred in July, three in August, and one in September. Surprisingly, there were no IMET (Incident Meteorologist) dispatches into the district, despite the six Type II or Type III fires.

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

A review of the seasonal 1000-hour fuel indices resulted in no significant findings. Critical values were achieved in mid to late August and again in mid to late September in zone 610 and zones 606 and 608.

The 2001 fire season could have been quite active, or at least more so than what actually occurred. Thanks to intermittent precipitation resulting in shorter-than-average dry spells, average to below-average lightning activity, minimal time periods of critical 1000-hour fuel indices, and few "significant" critical weather events, the 2001 fire season turned out to be fairly benign.



2001 PRE-SEASON: PRECIPITATION AND SNOWPACK

Table One (see bottom) shows the late fall through spring precipitation amounts. Note the percent averages. All listed locations experienced 65 percent or less of the average precipitation. Amazingly, Eugene recorded just over a third of their average. Also note the disparity in the May totals. The west side had near normal or slightly below normal rainfall. However, the east side stations had almost no rainfall at all. In fact, May was quite warm, especially on the east side. This fact (combined with the almost non-existent precipitation) could have lead one to believe that the 2001 fire season was going to be "bad", or at least start out that way.

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The Deschutes National Forest experienced the most fires in 2001, 256 total, of any jurisdictional agency. The Warm Springs unit of the Bureau of Indian Affairs (BIA) had 97 fires.

SOURCE: GACC Detailed Situation Report.

(TABLE ONE) 2000-2001 WET SEASON PRECIPITATION SUMMARY

	NOV	DEC	JAN	FEB	MAR	APR	MAY	TOT	AVE	PCT AVE
ASTORIA	3.86	5.81	4.60	3.43	5.23	5.59	3.12	31.64	52.88	59.8%
NEWPORT	4.10	5.32	4.09	4.05	5.30	5.19	1.94	29.99	58.95	50.9%
PORTLAND	2.46	3.47	1.47	1.29	3.11	2.85	0.91	15.56	28.68	54.3%
EUGENE	1.61	4.10	1.50	1.69	2.48	2.05	1.11	14.54	41.27	35.2%
G. CAMP	5.80	7.99	4.43	3.84	8.37	6.26	6.24	42.97	70.41	61.0%
OAKRIDGE	3.33	4.98	1.89	3.02	3.99	3.43	2.60	23.24	36.79	63.2%
DUFUR	0.82	0.79	1.00	0.99	0.88	0.96	0.05	5.49	9.79	56.1%
BEND	0.28	0.96	0.17	1.47	0.56	0.67	0.04	4.15	8.65	48.0%

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

The charts on **Pages 4 and 5** show the "wet season" rainfall compared to average and the percent of average. Each pre-determined area is represented by at least one site.

2001 SNOWPACK DATA (FOR GOVERNMENT CAMP)

The following chart shows the 2001 snow pack and the average for Government Camp.

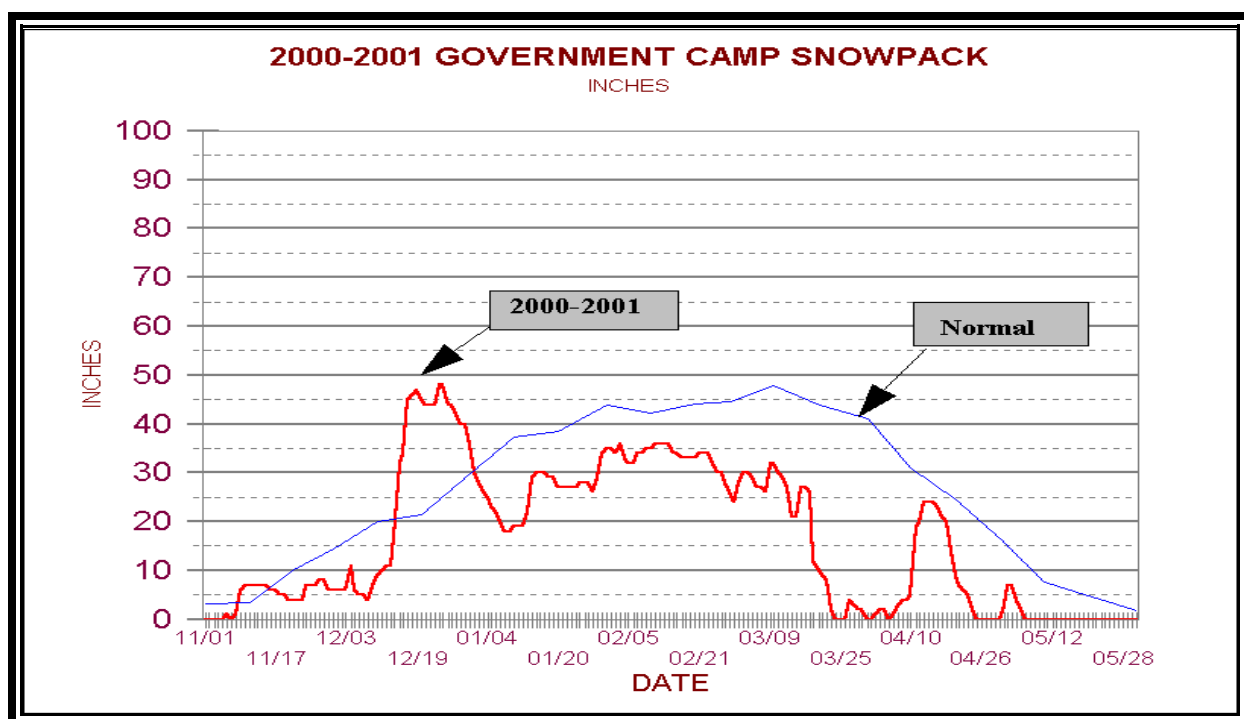


FIGURE TWO: Snow Depth at Government Camp, during 2000-01 Winter.



FAST FACTS: The largest fire to occur on the district was the Goodnoe Hill incident. The fire charred 11,526 acres. However, the fire was contained in just over two days. Goodnoe Hill is located a few miles north of Sand Spring Canyon (off Washington highway 14) and Rock Creek Road. The second-largest fire was the Olallie Complex that occurred on the Mt. Hood National Forest. It burned just over 2700 acres and took 17 days to contain.

Emigrant RAWS (zone 608) recorded a high temperature of 99 degrees on May 22. Emigrant had highs of 99, 98, 96, and 95 degrees, respectively, during the period August 8th through August 11th. Lava Butte RAWS (zone 610) observed 97 degrees on August 15th. This was the warmest temperature during the season at any east-side RAWS location.

Middle Mountain RAWS (zone 609) observed 10-minute average sustained wind of 19 to 24 mph and humidity of 18 to 24 percent from 1200 PDT to 1800 PDT on October 4. This was quite impressive since the east slopes of the Cascades usually do not experience such pronounced conditions during west-side east wind events.

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

2001 FIRE SEASON LIGHTNING DATA

The following table (*table two*) shows the areal frequency of lightning during the 2001 season.

2001 LIGHTNING DATA

AREA	# LIGHTNING DAYS 2001	AVE. # DAYS (LAST 7 YEARS)	PCT. AVE.
ZONE 601	2	5	40.0%
ZONES 602/603	4	5	80.0%
ZONE 604	3	5*	60.0%
ZONES 605/607/660	7	11	63.6%
ZONES 606 AND 608	11	12	91.7%
ZONE 609	12	12	100.0%
ZONE 610	19	20	95.0%

TABLE TWO

*** The average number of "thunderstorm days" during the fire season (typically May through October). The annual average is slightly higher.**

The seasonal lightning distribution for zone 610 showed some interesting characteristics. There were eight lightning days in July and five more in the first half of August. Lightning was recorded five days in a row from July 9 through July 13. The general weather pattern during the period was characterized by a strong upper ridge over the Great Basin with south flow aloft over Southern Oregon. A series of disturbances moved up the west side of the ridge during the five days.

It is also interesting to note that there were more lightning days in zones 606 and 608 compared to zone 609. One of the biggest determining factors for lightning was the northward extent of south flow aloft. It seemed that the south flow was usually confined to the south half of the state. Enough onshore, or west component, was evident in the north to limit lightning frequency. The coastal zones (601, 602, and 603) show the southern emphasis as well.

FAST FACT: Mutton Mountain (zone 609) and Lava Butte (zone 610) RAWs recorded critical 1000-hour fuel moisture values in mid-September. Mutton Mountain recorded 8 percent (critical is 8). Lava Butte reached 9 percent (critical is 10).

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

AREA WEATHER SUMMARIES

STATISTICS FOR AREA ONE (COASTAL STRIP AND NORTH COAST RANGE)

This is comprised of zones 601 and 602. RAWs used to represent the area include Cedar Creek, Rye Mountain, and South Fork.

Date	Temperature		Relative Humidity				Rainfall*			Lightning
			2 of the 3 RAWs meet criteria				*= median values			
	Ave Max	Ave Min	Ave Min	# days <25%	Ave Recovery	# Nights ≤ 60%	# Days >.01	# Days >.10	# Days >.25	# Days
May 1-10	60.4	38.2	47.4	0	88.4	1	4	3	1	NA
11-20	58.6	41.4	63.4	1	91.9	0	3	3	2	NA
21-31	73.1	50.2	40.0	3	72.9	3	1	1	0	NA
June 1-10	56.1	43.2	71.5	0	97.3	0	7	5	3	1
11-20	63.0	42.8	56.1	0	93.8	0	3	1	1	0
21-30	62.9	46.7	64.5	0	94.2	0	4	3	2	1
July 1-10	74.8	51.2	45.0	0	82.6	1	0	0	0	1
11-20	63.5	47.5	68.8	0	95.0	0	4	1	0	0
21-31	67.6	48.2	63.8	0	95.9	0	2	2	0	0
Aug 1-10	72.0	53.7	62.0	1	91.1	1	2	1	0	0
11-20	72.5	51.9	58.9	0	93.5	0	0	0	0	0
21-31	68.9	51.8	67.9	0	97.8	0	4	3	2	0
Sept 1-10	68.3	51.0	59.4	1	89.4	2	2	0	0	0
11-20	72.5	52.1	54.4	0	85.7	0	0	0	0	1
21-30	68.5	50.4	58.7	0	89.6	0	2	2	2	0
Oct 1-10	63.5	49.7	54.1	1	72.1	4	3	2	1	0
11-20	56.4	42.4	72.8	0	95.9	0	5	3	1	0
Ave/Totals	66.0	47.8	59.3	7	89.8	12	46	30	15	4
2000	69	51	57	11	89	16	32	15	8	5
1999	68	50	60	10	89	19	43	14	4	3
1998	72	53	58	2	87	12	25	11	6	4
1997	70	53	60	1	90	10	43	30	24	10

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

DRY SPELL				
2001	2000	1999	1998	1997
22 Days	44 Days	33 Days	47 Days	40 Days

AREA HIGHLIGHTS

There are several key points in the 2001 data that show why 2001 was not a very critical fire year (at least in this area). The average high temperature was the coolest in the past eight years. This fact may be skewed because only three RAWS sites were included in the 2001 data, compared to six RAWS the previous seven years. There were relatively few "critical RH nights". One-third of the seasonal total occurred in early October, when fuel indices were slightly elevated.

The biggest factor contributing to the lack of a fire season in this area was the precipitation frequency. There were 30 days where the median rainfall was one-tenth of an inch or more. This is double the 2000 total and is the most since 1997. Note the length of the dry spell. The 22 day period was the shortest dry spell in the last five years. The dry spell commenced in early September and extended until the 24th. Evaluating the dry spell was similar, but more stringent, than the previous four years. In 2001, "wetting" rainfall (one-tenth of an inch or more) needed to occur at two of the three RAWS used in the data set to end the dry spell. During the period 1997-2000, the dry spell ended when three of six RAWS recorded "wetting" precipitation. There were only two 10-day periods during the fire season when rainfall was not observed.

A look at the 1000-hour fuel moistures (***see Table 3 on page 19***) emphasizes the effect of precipitation frequency. The fuel moisture values were generally above normal during the season, except for brief periods in early June, mid-August, mid-September, and early October. However, critical values were never met, except in late July when 1000-hour fuels were close to critical levels.

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

AREA WEATHER SUMMARIES

STATISTICS FOR AREA TWO (CENTRAL COAST RANGE)

This is comprised of zone 603. RAWs used to represent the area include Wilkinson, High Point, Village Creek, and Clay Creek.

Date	Temperature		Relative Humidity				Rainfall*			Lightning
			2 of the 4 RAWs meet criteria				*= median values			
	Ave Max	Ave Min	Ave Min	# days <25%	Ave Recovery	# Nights ≤ 60%	# Days >.01	# Days >.10	# Days >.25	# Days
May 1-10	69.7	40.3	32.3	2	88.6	3	1	1	0	NA
11-20	67.9	44.1	48.8	2	94.0	1	3	3	2	NA
21-31	80.8	49.8	32.7	4	82.9	2	1	0	0	NA
June 1-10	66.5	44.9	55.9	0	97.3	0	6	3	0	0
11-20	72.6	45.1	43.1	1	93.3	1	1	1	1	0
21-30	69.2	48.8	59.6	0	96.0	0	4	3	2	0
July 1-10	84.5	50.9	32.0	2	90.1	1	0	0	0	0
11-20	75.8	49.6	46.7	0	95.8	0	0	0	0	1
21-31	78.9	51.1	44.6	1	93.9	1	2	1	1	0
Aug 1-10	82.5	53.7	42.8	2	94.9	1	1	0	0	0
11-20	81.7	51.2	42.2	0	97.8	0	0	0	0	0
21-31	78.4	52.1	50.3	0	98.2	0	3	2	1	0
Sept 1-10	78.1	50.7	36.9	2	91.1	1	0	0	0	0
11-20	80.7	52.7	38.4	0	92.7	0	0	0	0	1
21-30	76.0	49.7	42.1	1	93.6	0	3	2	0	0
Oct 1-10	69.7	48.8	48.4	2	88.2	1	2	1	1	0
11-20	63.8	44.2	54.3	0	98.1	0	2	0	0	0
Ave/Totals	75.1	48.7	44.2	19	93.3	12	29	17	8	2
2000	73	51	55	7	91	12	20	12	4	4
1999	72	51	53	5	90	12	33	11	4	3
1998	76	53	54	0	92	6	22	6	3	2
1997	74	53	57	2	93	4	36	26	14	6

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

DRY SPELL				
2001	2000	1999	1998	1997
32 Days	57 Days	33 Days	83 Days	40 Days

NOTE: This area is slightly different than previous years. In previous years the south portion of zone 601 was included in the data set (Dunes, Cannibal Mountain and Goodwin Peak RAWS). It was decided to not include these RAWS in the Central Coast Range, in order to minimize the coastal affects. Therefore, some of the values in the table show large differences to those of 1997-2000.

The criteria for a 25 percent or less humidity day and 60 percent or less humidity night vary slightly than last year. In 2001, at least **TWO** of the four RAWS had to register 25%/60% humidity for **AT LEAST TWO** consecutive hours.

AREA HIGHLIGHTS

One of the more remarkable statistics is the number of days the humidity met the 25 percent or less criteria (19). It is far more than occurred in any of the past four years. But, the coastal RAWS were not included in the 2001 data. The fire season was also fairly wet, as evidenced by the number of "wetting rain" days (one-tenth of an inch or more) and number of days with one-quarter of an inch or more. Lightning activity was quite minimal.

Similar to Area One, the season's dry spell was short (32 days). The dry spell began in late August and continued into late September. Notice the cyclic nature of the dry spell during the past few seasons. The even-numbered years have had extended dry spells.

The 1000-hour fuel moisture values were below normal in May and June. However, these values stabilized to normal levels during July through September, then went well below normal in early October (during an extended offshore event). Critical 1000-hour values were never met, but came quite close in parts of July, August, and September (15, critical value is 14).

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

AREA WEATHER SUMMARIES

STATISTICS FOR AREA THREE (NORTH CASCADES)

This area is comprised of zones 605, 607, and 660. RAWs used to represent the area include Elk Rock, Hamilton, Trout Creek, Canyon Creek, Cedar Flats, Log Creek, Horse Creek, and Blue Ridge.

Date	Temperature		Relative Humidity				Rainfall*			Lightning
			4 of the 8 RAWs meet criteria				*= median values			
	Ave Max	Ave Min	Ave Min	# days <25%	Ave Recovery	# Nights ≤ 60%	# Days >.01	# Days >.10	# Days >.25	# Days
May 1-10	59.3	37.0	46.5	0	86.1	3	4	2	1	NA
11-20	58.9	39.9	59.3	0	90.5	2	3	2	2	NA
21-31	71.9	48.1	40.5	1	73.7	6	1	1	1	NA
June 1-10	56.5	42.0	68.1	0	95.8	0	8	5	5	1
11-20	61.4	41.6	57.2	1	94.6	0	2	2	2	0
21-30	63.1	46.4	65.3	0	95.5	0	4	4	3	1
July 1-10	76.8	51.0	39.0	0	82.8	2	0	0	0	0
11-20	63.7	48.4	66.6	0	95.7	0	4	3	0	2
21-31	66.8	48.9	64.3	0	99.0	0	3	3	1	0
Aug 1-10	75.8	53.3	49.0	1	86.5	2	0	0	0	0
11-20	75.2	53.4	52.4	0	92.5	0	0	0	0	1
21-31	70.2	50.9	61.6	0	96.6	0	3	3	2	0
Sept 1-10	67.7	48.0	52.6	0	88.6	2	0	0	0	0
11-20	73.5	52.1	47.9	0	86.7	0	0	0	0	2
21-30	68.4	49.6	51.6	0	81.8	2	2	2	2	0
Oct 1-10	60.2	45.9	54.0	1	72.6	4	4	2	2	0
11-20	53.5	40.3	71.8	0	94.3	0	4	4	4	0
Ave/Totals	66.1	46.9	55.7	4	89.0	23	42	33	25	7
2000	69	49	52	16	87	17	22	13	8	3
1999	68	48	52	15	82	22	36	18	7	10
1998	72	52	53	6	84	17	28	13	7	19
1997	69	51	61	1	89	13	37	27	17	11

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

DRY SPELL				
2001	2000	1999	1998	1997
32 Days	44 Days	30 Days	83 Days	40 Days

NOTE: Area Three remained the same as previous years (i.e. no additions or subtractions). However, only eight RAWS were used instead of 12. **FOUR** of the RAWS (or more) had to meet or exceed the 25%/60% critical levels for **TWO** (or more) consecutive hours in order to classify as a "critical RH day or night".

Another problem in the data was that the Washington RAWS sites (Elk Rock, Hamilton, Trout Creek, Canyon Creek, and Cedar Flats) began reporting at different times in May. Some sites were not available during the early and middle parts of the month.

AREA HIGHLIGHTS

This area did not have much of a fire season. High temperatures were the coolest in the past eight years. There were minimal (4) "critical RH days", far fewer than the 16 in 2000 and 15 in 1999. Interestingly, there were more "critical RH nights" (23), compared to previous years. There were two distinct and prolonged east-wind events: 1) late May, and 2) early October.

The most striking element was the precipitation frequency. Note the 42 days of measurable rainfall and 33 days of "wetting rain". The 2001 fire year was even more wet than the "non-existent" 1997 fire year. There were 25 days when rainfall was one-quarter inch or more. This is well above the total for any of the previous eight years. The area experienced a major deluge in mid-May. The Hamilton RAWS registered 5.39 inches of rain during May 14 and 15. Nearly four inches (3.95) fell on the 14th. Horse Creek RAWS picked up 2.73 inches on the 14th. The longest dry spell was 32 days, which is shorter than previous years. The dry spell began August 24th and extended to September 25th.

Lightning activity was below normal. A mid-September lightning outbreak resulted in a Type II-level incident (Salt Creek fire) on the Gifford Pinchot National Forest.

The 1000-hour fuel moisture values were well above normal in June and July, but then dipped slightly below normal by September and early October. A couple of RAWS sites (Canyon Creek and Red Box Bench) approached critical 1000-hour levels in late September. The 1000-hour zone average went from 19.3% at the beginning of October, to 27.7% by mid-October.

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

AREA WEATHER SUMMARIES

STATISTICS FOR AREA FOUR (CENTRAL CASCADES)

This area is comprised of zones 606, and 608. RAWs used to represent the area include Hawley Butte, Pebble, Fields, and Emigrant.

Date	Temperature		Relative Humidity				Rainfall*			Lightning
			2 of the 4 RAWs meet criteria				*= median values			
	Ave Max	Ave Min	Ave Min	# days <25%	Ave Recovery	# Nights ≤ 60%	# Days >.01	# Days >.10	# Days >.25	# Days
May 1-10	66.2	39.1	29.2	5	79.6	3	2	2	0	NA
11-20	65.2	42.8	48.1	1	89.7	2	3	3	2	NA
21-31	78.5	50.0	27.6	5	68.1	6	0	0	0	NA
June 1-10	60.7	42.4	56.1	0	95.5	0	7	6	2	1
11-20	68.6	41.6	36.5	2	87.4	1	2	2	1	0
21-30	67.3	47.5	54.3	0	95.7	0	5	4	1	1
July 1-10	81.9	52.4	32.0	2	78.4	4	0	0	0	2
11-20	73.0	48.9	42.3	0	93.8	0	2	1	1	2
21-31	75.8	49.1	39.3	0	90.9	1	2	2	2	0
Aug 1-10	82.7	53.7	36.0	2	87.3	1	1	0	0	0
11-20	81.6	53.2	34.0	0	87.7	1	0	0	0	1
21-31	78.1	50.7	37.9	0	92.4	1	3	2	0	0
Sept 1-10	77.7	48.6	27.8	3	72.9	4	0	0	0	0
11-20	81.1	52.6	28.3	4	77.3	2	1	1	0	4
21-30	74.6	49.6	39.4	6	70.3	6	2	2	1	0
Oct 1-10	70.0	47.9	34.7	5	65.2	6	2	2	1	0
11-20	66.0	42.2	41.7	1	87.4	2	3	2	1	0
Ave/Totals	73.5	47.8	38.0	36	83.5	40	35	29	12	11
2000	75	50	42	21	85	13	19	12	6	7
1999	73	50	43	15	81	18	34	12	4	9
1998	76	53	48	5	85	14	19	7	5	18
1997	74	52	51	5	89	10	34	25	14	12

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

DRY SPELL				
2001	2000	1999	1998	1997
22 Days	57 Days	34 Days	83 Days	41 Days

NOTE: Four RAWS were used in the data set this year, compared to six RAWS in previous years. This fact likely had a major affect on the "poor recovery" nights. There were many more "poor RH" nights in 2001 compared to the previous seven years. Remember, the criteria for a "poor RH" night (in 2001) was that **TWO** of the four RAWS had to observe 60 percent RH or less for at least **TWO** consecutive hours.

AREA HIGHLIGHTS

The most significant observation was the high number of critical RH days and nights. As mentioned above, the data was likely skewed due to fewer RAWS (four vs. six). This area also experienced frequent episodes of "wetting rain". There were 29 days of "wetting rain" in 2001. This was well above the totals for 1998, 1999, and 2000. The "wet" year of 1997 had 25 days. There were many more days of a quarter-inch or more in 2001 (12) compared to previous years. The "wet" years of 1997 and 1995 had 14 days.

Note the relatively short length of the dry spell (22 days). This was much shorter than the 2000 dry spell, and was even shorter than the "wet" year of 1997. There were two 22-day dry spells. The first occurred from July 31 through August 21. The second period was from August 24 through September 14.

The 1000-hour fuel moisture values were well above normal in June, and slightly above normal in July. The indices fell to near normal in August, then went slightly below normal in September and well below normal in early October. But, critical levels were only met in the extreme south part of the Willamette National Forest in September. Emigrant RAWS bottomed out at 10 percent in the middle and late parts of September (critical is 11 percent). The area average during the latter part of September was 13 percent, which is the critical value. The area average in early October was 14.8 percent, which was well below the normal of 20 percent. However, by the end of October the area average had increased to 34 percent, well above the average of 26.5 percent.

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

AREA WEATHER SUMMARIES

STATISTICS FOR AREA FIVE (NORTH CENTRAL OREGON)

This area is comprised of the east slopes of the North Cascades and the Warm Springs Reservation (zone 609). RAWS used to represent the area include Polligwog, Wamic Mill, Mt. Wilson, Mutton Mountain, HeHe Butte, Wasco Butte, and Metolius Arm.

Date	Temperature		Relative Humidity				Rainfall*			Lightning
			3 of the 7 RAWS meet criteria				*= median values			
	Ave Max	Ave Min	Ave Min	# days <15%	Ave Recovery	# Nights ≤ 40%	# Days >.01	# Days >.10	# Days >.25	# Days
May 1-10	64.5	36.7	29.4	0	74.9	1	1	1	0	NA
11-20	64.9	41.8	40.7	0	75.6	0	3	2	1	NA
21-31	79.0	49.4	24.5	1	59.2	1	1	0	0	NA
June 1-10	61.8	43.3	45.1	0	82.8	0	4	1	0	2
11-20	67.5	42.7	33.0	1	71.9	1	2	1	0	0
21-30	70.4	47.8	40.2	0	83.0	0	4	2	1	1
July 1-10	85.6	55.7	18.8	3	54.2	5	0	0	0	1
11-20	72.4	50.7	37.4	0	76.2	0	0	0	0	4
21-31	74.9	50.9	37.6	0	79.4	0	2	2	0	1
Aug 1-10	83.5	55.0	29.0	1	70.6	3	0	0	0	0
11-20	85.7	58.1	22.8	1	60.1	4	0	0	0	1
21-31	77.5	52.4	33.6	0	78.4	0	3	1	0	0
Sept 1-10	75.0	49.4	27.3	3	65.4	3	0	0	0	0
11-20	80.8	55.1	23.3	1	59.2	1	0	0	0	2
21-30	71.3	49.0	37.6	1	66.3	1	2	1	1	0
Oct 1-10	64.3	44.3	32.7	3	58.2	4	2	1	1	0
11-20	60.4	39.9	42.2	0	83.9	0	1	1	1	0
Ave/Totals	72.9	48.4	32.7	15	70.5	24	25	13	5	12
2000	76	48	31	5	73	5	11	1	0	5
1999	74	46	30	6	70	11	10	4	2	13
1998	79	52	33	10	72	11	17	6	1	16
1997	75	50	36	1	75	3	25	9	3	19

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

DRY SPELL				
2001	2000	1999	1998	1997
32 Days	118 Days	50 Days	49 Days	54 Days

NOTE: The 2001 data did not include Colgate RAWS. The criteria for a critical RH day or night was **THREE** of the seven RAWS had to record the necessary humidity (less than 16 percent for daytime or 41 percent for nighttime) for at least **TWO** consecutive hours. This guideline was likely a little easier to obtain compared to **FOUR** out of eight RAWS (in previous years). Critical RH nights included those with values of 40 percent (unlike previous years where the threshold was less than 40 percent). The HeHe Butte RAWS was moved in 2001. Its "new" data could have contributed to slight differences in the overall zone averages compared to previous years.

AREA HIGHLIGHTS:

The average high temperature was the coolest in the past eight years, and three degrees cooler than the 2000 average. In fact, during the period July 11-31, the average high was 73.6 degrees, well below normal. There were many more critical RH days and nights, but this could have been the result of slightly different data sets. The average minimum humidity was quite similar to previous years, though (33 percent vs. low to middle 30s). The 24 critical RH nights far exceeded the highest from any of the previous seven years (11).

A constant trend throughout the fire weather district, including this area, was the frequent precipitation episodes. There were 13 "wetting rain" days in 2001. Last year there was just one. There were nine days during the "wet" year of 1997. There were five days when the median rainfall exceeded one-quarter inch. This did not happen at all in 2000. The dry spell in 2001 was a mere 32 days. It occurred from August 23 to September 24. The dry spell last year was an amazing 118 days.

The 1000-hour fuel moisture values showed interesting trends. The values were slightly above normal at the beginning of the season (June and July), but slipped below normal in August. The below-normal trend persisted through September and early October. Critical levels were met in the Warm Springs region during portions of July and September. Mutton Mountain RAWS recorded 8 percent in middle and late September (average is 12 percent and critical is 8 percent). The Polliwog RAWS never reached critical levels.

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

AREA WEATHER SUMMARIES

STATISTICS FOR AREA SIX (DESCHUTES AREA)

This area is comprised of the Deschutes National Forest (zone 610). RAWs used to represent the area include Round Mountain, Lava Butte, Black Rock, and Cabin Lake.

Date	Temperature		Relative Humidity				Rainfall*			Lightning
			2 of the 4 RAWs meet criteria				*= median values			
	Ave Max	Ave Min	Ave Min	# days <15%	Ave Recovery	# Nights ≤ 40%	# Days >.01	# Days >.10	# Days >.25	# Days
May 1-10	65.0	32.0	19.9	3	71.5	0	0	0	0	NA
11-20	66.1	38.1	32.9	1	80.1	1	2	2	1	NA
21-31	78.5	44.3	21.6	1	66.8	2	0	0	0	NA
June 1-10	62.2	37.9	36.0	0	85.9	0	1	0	0	2
11-20	69.9	36.5	23.6	2	70.1	1	1	0	0	0
21-30	70.4	43.5	34.8	1	85.1	0	5	1	1	0
July 1-10	85.9	51.8	19.6	2	60.4	4	0	0	0	3
11-20	71.6	44.6	34.4	0	86.5	0	2	2	1	5
21-31	75.8	44.2	25.8	3	81.2	0	2	2	0	0
Aug 1-10	85.3	51.0	22.1	0	74.3	3	1	0	0	3
11-20	86.3	51.5	17.4	4	62.6	5	0	0	0	2
21-31	80.6	46.5	23.0	1	74.9	0	2	0	0	0
Sept 1-10	78.1	42.6	16.8	6	61.6	3	0	0	0	0
11-20	78.9	47.3	20.2	3	68.0	3	2	1	0	4
21-30	72.0	41.5	30.0	5	71.1	2	2	1	1	0
Oct 1-10	69.5	37.6	19.7	3	57.5	6	1	1	0	0
11-20	63.1	35.0	29.2	3	78.1	0	1	1	0	0
Ave/Totals	74.1	42.7	25.1	38	72.7	30	22	11	4	19
2000	77	43	24	30	73	1	10	1	0	7
1999	74	41	25	33	76	4	17	6	1	20
1998	77	46	30	19	80	11	28	14	3	25
1997	74	44	33	6	84	0	27	16	9	22

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

DRY SPELL				
2001	2000	1999	1998	1997
29 Days	92 Days	64 Days	26 Days	28 Days

NOTE: The 2001 data set did not include Camp2 RAWs. Similar to zone 609 (Area Five), critical RH nights included those when the RH was 40 percent. **TWO** of the four RAWs had to record 40 percent or less for two consecutive hours in order to qualify as a critical RH night.

AREA HIGHLIGHTS:

The 2001 fire season for this area was cooler than 2000. The average daytime humidity was similar, but the nighttime humidity was the lowest since 1994. There were 38 days of critical RH, the most in the last eight years. There were 30 critical nights, using the slightly modified criteria. The 30 nights far exceeded any of the past seven years. There were three warm and dry periods: 1) early July, 2) mid-August, and 3) early October.

Periodic thunderstorm patterns in July and August contributed to a short dry spell. The 2001 dry spell was only 29 days and was early in the season. It began on May 28th and extended to June 26th. There were 11 days when the median rainfall exceeded one-tenth of an inch. There was just one such day in 2000. The 1998 fire season was the last double-digit year for wetting rain.

Lightning activity in 2001 was normal (19 days). The dry year of 2000 had just seven lightning-days. Prolonged drought conditions resulted in low 1000-hour fuel moisture values. The indices at the start of the season were below normal, and remained below normal until the middle of October. Critical to near-critical indices occurred in August, September and early October. The frequency of wetting rain, cooler-than-normal high temperatures, and limited dry lightning, helped to prevent an active fire season in this area. There was only one major fire, the Crane Complex. It started on August 12th and was contained on the 25th.

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

i

1000-HOUR MONTHLY FUEL MOISTURE VALUES (PERCENT)

TABLE THREE

MONTH	602/603			605/607/660			606/608			609			610		
	AVE	NORM	CRIT.	AVE	NORM	CRIT.	AVE	NORM	CRIT.	AVE	NORM	CRIT.	AVE	NORM	CRIT.
JUNE	23	26.5	20.5	31	27	21	26	22.5	18	15.5	14	12	14	15	12.5
JULY	23	19.5	17	25.3	20	17	19.8	16	13.5	13.5	11	9	12.5	12.5	9.5
AUG	22.5	20.5	15.5	22.3	21	16	17.8	17	12.5	10.5	11	8	11	12	9
SEP	20.5	22	15.5	20.7	23	16	16.8	17.5	13	11	12	8	12	13.5	9
BEG. OCT	18	23.5	15.5	19.3	24	16	14.8	20	12	9.5	13	8	10.5	14	9.5
END OCT	33	29.5	21	27	27.7	16	34	26.5	18.5	21.5	16	11	17.5	17	11.5
	MINIMUM: 17 IN LATE JULY, MID AUGUST AND MID SEPTEMBER.			MINIMUM: 21.3 IN MID TO LATE JULY. 20 IN MID TO LATE AUGUST. 18 IN LATE SEPTEMBER.			MINIMUM: 16 IN LATE JULY AND MID AUGUST. 13 IN MID AND LATE SEPTEMBER.			MINIMUM: 10 IN MID AND LATE JULY. 9.5 IN MID AND LATE AUGUST. 8.5 IN MID AND LATE SEPTEMBER.			MINIMUM: 11 IN MID AND LATE JULY. 10 IN MID AND LATE AUGUST. 9.5 IN MID SEPTEMBER.		

NOTES: The values are zone averages. Not all RAWs were used in the compilation. The zone averages seem to indicate that critical levels were not obtained. However, individual RAWs sites did reach critical values. Detailed fuel conditions can be obtained from the National Forest in question, or from the Predictive Services division of the GACC.

i

CRITICAL FIRE WEATHER EVENTS

"Critical Fire Weather" conditions are those that **COULD** result in extreme fire behavior, or, in the case of dry lightning, an abnormally high number of

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

ignitions. One must be careful when assessing "dry" lightning. There are times when lightning activity does not meet Red Flag criteria (scattered coverage), but does result in a high incidence of project fires.

The overall severity of any fire season is highly correlated with the extent and frequency of critical fire weather patterns during the season. It is not unusual to have an extended "dry period" during any given fire season. This in itself could result in an elevated degree of fire activity, provided the fuel conditions are right. However, to elevate a high fire danger situation to a critical level normally requires an additional weather element to be superimposed on the dryness. This additional element could be "dry" lightning, an extremely unstable atmosphere, or a combination of strong wind and low humidity. Red Flag Warnings are issued when a combination of critical weather elements exists **WITH** sufficiently dry fuels and severe burning conditions.

CRITERIA FOR STRONG WIND AND LOW HUMIDITY

HALF OF THE WIND SENSITIVE RAWS IN AN AREA MUST MEET THE FOLLOWING CRITERIA:

OVERNIGHT EVENT (2200 TO 0600 PDT)

WESTSIDE (EAST WIND):

1. 5 HRS RH < 40% WITH
2. WINDSPEED \geq MPH. AND
3. 1 HR RH < 35% WITH
4. WINDSPEED > 14 MPH OR \geq 90TH PERCENTILE WIND

EASTSIDE:

1. 3 HRS OF RH \leq 30% WITH
2. WINDSPEED \geq 10 MPH.

AFTERNOON EVENT (1200-2000 PDT)

1. ZONE 610 - 3 HRS RH < 20%.
2. ZONE 609 - 3 HRS RH < 20%
3. WESTSIDE - 3 HRS RH \leq 25% WITH WINDSPEED \geq 10 MPH.

CRITERIA FOR DRY AND UNSTABLE DAY

1. TEMP. DIFFERENCE BETWEEN 10,000 AND 18,000 FT. IS >21 DEGREES CELSIUS.

2. FREE AIR RH AT 5000 FT IS >25%.

3. LOW SURFACE RH. AT LEAST ONE RAWS IN AN AREA REPORTS A MINIMUM RH MEETING THE FOLLOWING CRITERIA:

EASTSIDE: \leq 15%
WESTSIDE: \leq 25%

IF ALL 3 OF THE ABOVE ARE MET, THE DAY IS CONSIDERED CRITICALLY DRY AND UNSTABLE.

NOTE: ACTUAL UPPER AIR DATA IS ONLY OBSERVED AT A FEW LOCATIONS NATIONWIDE. THEREFORE, CRITERIA 1 AND 2 ARE ACTUALLY DERIVED FROM ESTIMATES TAKEN FROM MATHEMATICAL WEATHER MODELS.

DRY LIGHTNING CRITERIA

1. LIGHTNING OCCURRENCE MUST BE "SCATTERED" (OR MORE) IN COVERAGE.

2. LOW RH IN THE LOWER LEVELS OF THE ATMOSPHERE. I.E. <20% AT 5000 FT AND <35% AT 10,000 FT.

3. NO RAWS IN AN AREA REPORTING >.10 INCHES OF RAIN.

IF ALL 3 OF THE ABOVE ARE MET, THE EVENT IS CONSIDERED A "DRY" LIGHTNING EVENT.

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

CRITICAL FIRE WEATHER EVENTS:

STRONG WIND AND LOW HUMIDITY

There were two "significant" east wind events that affected the west side zones. Both cases resulted in the issuance of Red Flag Warnings. The first case (September 8-9) was a marginal event. The 1000-hour fuel indices were generally above normal, except for the south end of the Willamette N.F.. However, the south part of the Willamette N.F. is not prone to east wind. The second event (October 2-5) was more significant. It was a prolonged event, and 1000-hour fuel indices were well below normal, reaching critical levels in zone 608.

1. SEPTEMBER 8-9

This event began on the morning of the 8th and abated the afternoon of the 9th. A Red Flag Warning was issued at 1000 PDT for zones 607 and 608. The general weather pattern consisted of a 590 decameter upper level high centered around 45N and 135W. A 1024 mb surface high was centered over Central Idaho with a thermal trough near the coast.

The east wind weakened in the afternoon, but intensified during the night. This is typical for east wind patterns. The Horse Creek RAWS observed 10-minute average wind speed of 13 mph from 0500 to 0700 PDT. The Olallie Lookout (in the Mount Hood N.F.) registered east wind of 20 mph with gusts to 40 mph at 0900 PDT. The Emigrant RAWS (south end of zone 608) met criteria (see criteria on previous page) from noon until 1800 PDT on the 8th.

The east-wind pattern broke down on the morning of the 9th. The thermal trough weakened and the surface high shifted into the Intermountain Region.

2. OCTOBER 2-5

This event was one of the most significant east wind events in a few years. The pattern evolved on the 2nd. A strong thermal trough developed along or just off the coastline. The upper air pattern was not conducive to a major east wind event. There was west to northwest flow aloft over the Pacific Northwest. The Blue Ridge RAWS (zone 607) experienced east wind of 11 to 16 mph the morning of the 2nd. However, this RAWS is quite wind prone, and is not representative of the area. The Cedar Creek RAWS (in the Coast Range) also met criteria for a couple of hours (0100 to 0300 PDT).

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

The pattern intensified on the 3rd. The surface thermal trough was still along the coast. There was also some mid-level support (E-NE flow). A strong surface high (1032 mb) was over South British Columbia at 0700 PDT. A Red Flag Warning was issued at 1205 PM PDT for all Cascade zones valid for the 4th through 1200 PDT of the 5th. Strong north to northeast flow aloft was over the district on the morning of the 4th. A cold front had swept across the Northern Rockies. The strong surface high remained over the south part of British Columbia. The Horse Creek RAWS had east wind of 11 to 16 mph during the early morning hours of the 4th. The Coast Range also experienced strong east wind. However, fuel conditions had elevated enough by then to preclude any warnings.

The pattern persisted through the morning of the 5th. Horse Creek RAWS registered speeds of 12 to 17 mph from 0100 to 0700 PDT. Log Creek RAWS, not known for significant wind, had east wind of 12 to 14 mph early on the 5th. The upper level ridge axis shifted into Eastern Oregon by 0700 PDT of the 5th. The strong surface high had migrated to Eastern Montana. The surface thermal trough was still west of the Cascades early on the 5th, but shifted to the east later in the day.

DRY UNSTABLE ATMOSPHERE

Fires burning under a dry and extremely unstable air mass tend to be plume dominated and can exhibit extreme fire behavior. The Haines Index is a tool used to assess the degree of air mass instability and dryness. The Portland Fire Weather office uses a modified version of the Haines Index to determine a dry and unstable air mass. The components are the "lapse rate", (temperature difference) between 10,000 feet and 18,000 feet and the humidity at 5,000 feet. Also, at least one RAWS must report critical humidity.

Data were unavailable (at time of this compilation) to assess this critical weather pattern.

"DRY" LIGHTNING

"Dry" lightning is virtually impossible to evaluate and to predict. The general definition of "dry" lightning is lightning with no "significant" accompanying precipitation. Objective criteria to evaluate this phenomena are difficult to develop due to the localized nature of thunderstorms and the scarcity of RAWS stations. New objective criteria are being developed and will likely be in effect for 2002.

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

There were three distinct lightning episodes: 1) July 9th through 13th, 2) August 9th through 14th, and September 12th through 16th. The first episode was not classified as a "dry" lightning event. The second event could have been classified as a "dry" lightning case. A Fire Weather Watch was issued at 1305 PDT on August 11th valid for the afternoon of the 12th. An upper level ridge was centered over the Cascades on the 11th. There was a weak upper trough off the California coast. Weak disturbances originating from the trough would move across Southern and Central Oregon from time to time. One such disturbance was expected to drift across the area on the 12th. The watch was upgraded to a warning at 1230 PDT on the 12th. Several starts were noted in zone 610 late in the afternoon.

The pattern changed by the 15th. A west flow aloft spread over the district and the thermal trough shifted into the Columbia Basin.

The final significant lightning episode occurred in mid-September. This is an unusual time for lightning. Historically, lightning activity virtually ends by the first week of September. This event **WAS NOT** dry. The pattern evolved on the 11th. There was a "closed" upper low off the Central California coast. A surface thermal trough was west of the Cascades. By 0700 PDT of the 12th, the low had drifted to near San Francisco and the surface thermal trough was near the Cascade crest. Rainfall was noted over Southwest Oregon on the 12th. A few lightning strikes were recorded in the extreme south part of zones 608 and 610.

The low was over extreme Northwest Nevada by 0700 PDT of the 13th. Significant rainfall was noted in Central and Eastern Oregon. Widespread lightning occurred on the 13th and 14th. The only area in the Portland fire weather area that did not get any lightning was zone 660.

The typical "dry" lightning pattern is characterized by a strong upper level ridge over the Pacific Northwest and a surface thermal trough near the Cascades. Usually, a weakness develops off the California coast. This turns the upper and mid-level air flow to the south. The south flow pulls available moisture from the desert Southwest (normally referred to as "monsoonal" moisture). The amount of moisture that is transported into the Cascades and east side zones is critical. Too much moisture results in wet thunderstorms. Not enough moisture and thunderstorms are not likely to develop. In the Portland district, a "dry" thunderstorm pattern does not last very long. The initial surge of moisture may result in "dry" storms. Once the first round of storms has occurred, the air mass usually becomes increasingly wetter.

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

FORECASTS AND SERVICES

SPOT FORECASTS

There were 196 spot forecasts issued for the 2001 fire season. This total represents a 180% increase from last year (109 spots). There were 70 wildfire spot forecasts. This was by far the most wildfire spots since 1991. The previous high was 54 in 1999. Project spot forecasts totaled 125. There was one spot forecast request for a Search and Rescue mission.

The monthly breakdown (see figure 3) was rather interesting. There were 74 requests in May. In May of 2000 there were just 3 requests. The other peak months for 2001 were August (32 requests), September (21 requests), and October (20 requests). August contained 25 wildfire requests, while September had 21 wildfire requests. **Table 4** on page 26 shows the spot forecast breakdown for the past 11 years.

INTERESTING SPOT FORECAST FACTS

- i First project spot request was March 13, 2001 for the Horning Seed Orchard Spray project from the Salem BLM.
- i The last project spot request was October 26, 2001 for the Blackbark Unit from the Fort Rock district of the Deschutes N.F..
- i The first wildfire spot forecast was on May 11, 2001 for the Emerald Wildfire. This fire was on the Fort Rock district of the Deschutes N.F..
- i The last wildfire spot forecast was on September 30, 2001 for the Twin Buttes Wildfire. This fire was on the Sweet Home district of the Willamette N.F..
- i Most spot forecasts in one day: 10 on May 11, 2001. There were 9 requests on May 10.
- i There were 133 requests from the USFS, 35 requests from BLM, 22 requests from BIA, and 1 request from ODF. The remaining 5 spot requests were from rural or city fire departments.

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

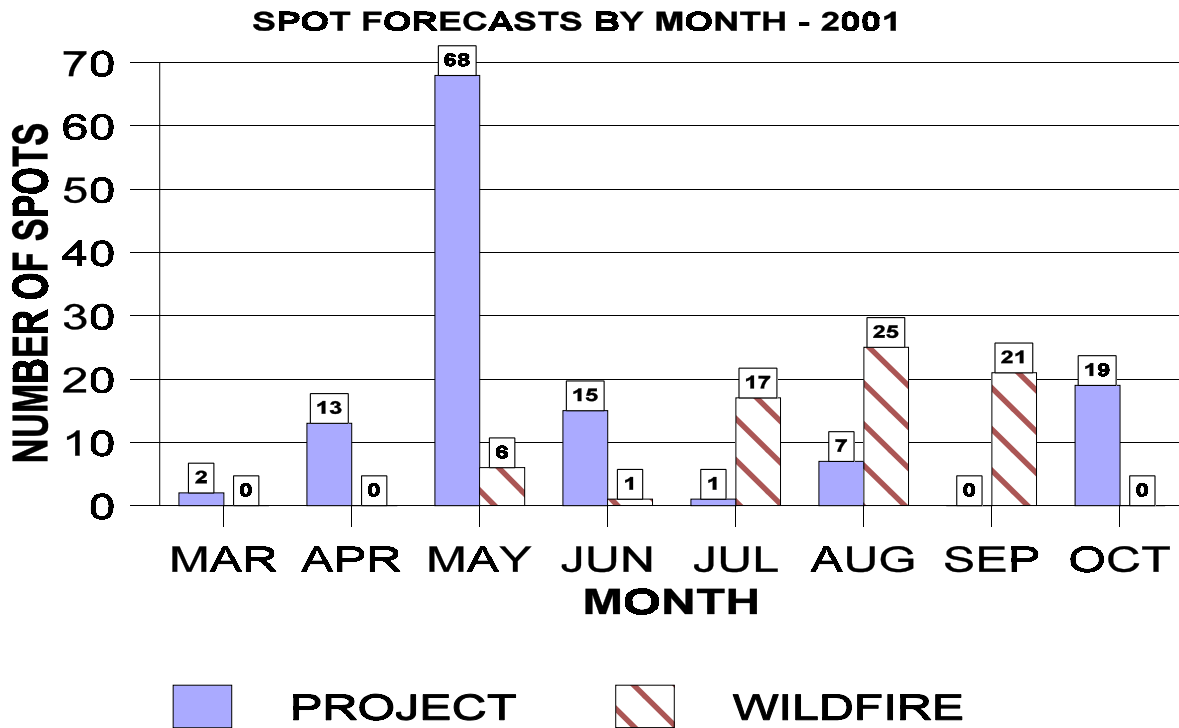


FIGURE THREE

TURN-AROUND TIME

“Turn-Around Time” is a relatively new statistic that has been tracked since last year. It is defined as the elapsed time between spot request receipt (or notification) and forecast transmission. The Web-based spot program makes this element very easy to monitor. In 2001, the average turn-around time was 53.6 minutes.

WEB-BASED SPOT PROGRAM

The web-based spot form was introduced to the users last year, and was fully operational this year. It was a major improvement in spot timeliness. The requesting agency did not have to fax the request AND notify the forecaster.

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

SPOT FORECASTS BY YEAR

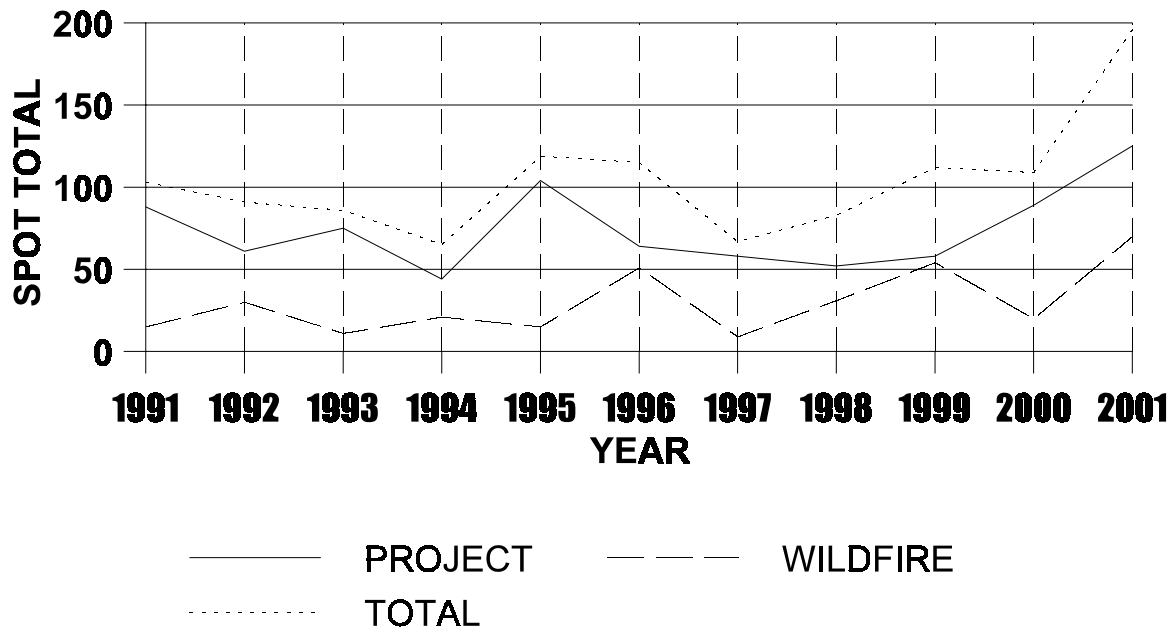


FIGURE FOUR

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ANNUAL SPOT FORECAST DATA

(TABLE FOUR)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
PROJECT	88	61	75	44	104	64	58	52	58	89	125
WILDFIRE	15	30	11	21	15	51	9	31	54	20	70
TOTAL	103	91	86	65	119	115	67	83	112	109	196

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

FORECAST SERVICES

The fire weather desk was staffed from March 13, 2001 through October 26, 2001. Full fire weather operations (7 days a week) commenced on May 20, 2001. Internet briefings began on June 11, 2001 and ended on October 19, 2001. The office also supplied staffing (one person) to the NW Coordination Center during the season.

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

RED FLAG INFORMATION

There was one (1) Fire Weather Watch and three (3) Red Flag Warnings during the 2001 season. The Watch was issued for dry lightning in the Cascades and east side zones. It was upgraded to a Warning. The other two Warnings were for "east wind" events in the Cascades. The north portion of zone 602 was added to the last warning the day after it was issued.

August 11-12

A Watch was issued at 105 PM PDT on August 11 for thunderstorms. The Watch covered the Cascades zones (607, 608, and 660), as well as the east side zones (609, 610). Scattered coverage was expected, and the majority of storms were forecast to be wet. However, 1000-HR fuel moistures were critical, prompting the issuance of the Watch.

Normally, scattered thunderstorm coverage with isolated dry cells would **NOT** warrant a Watch or Warning (see critical fire weather patterns and Red Flag criteria). Due to the critical values of the 1000-HR fuels (which is ONE parameter to consider for Red Flag conditions) it was deemed appropriate to issue the Watch.

The Watch was upgraded to a Warning at 1230 PM PDT on August 12. The Warning was for dry lightning and was in effect through the evening of the 12th. In addition, the Cascade foothill zones (605 and 606) were included. The Warning was officially ended at 730 AM PDT on August 13.

September 8

A Red Flag Warning was issued at 958 AM PDT on September 8. The Warning was for strong east wind and very low humidity, and was in effect for the Oregon Cascades (zones 607 and 608). Critical 1000-HR fuel values also existed. A Watch was **NOT** issued. The Warning officially ended at 800 AM PDT on September 9.

October 3-5

A Red Flag Warning was issued at 1205 PM PDT on October 3. The Warning was for strong east wind and low humidity, and was in effect for all Cascade zones (605, 606, 607, 608, and 660). The Warning was valid for the next day (October 4), and through noon of October 5. A Watch was **NOT** issued. The

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

extreme north portion of zone 602 was added to the Warning on the 4th, at 1305 PM PDT. The Warning officially ended at 1115 AM of the 5th. Data showed that zone 609 likely met criteria for wind/low RH on October 4th. Four RAWs met the criteria, but only two RAWs reached warning levels at the same time. However, the other two RAWs reached criteria just before and after the first two sites. This "probably" qualified as a "missed event".

RED FLAG WARNING STATISTICS FOR 2001

The following table (**Table 5**) shows the Red Flag verification statistics for the 2001 fire season.

TABLE FIVE

ZONE	# RFW	CORRECT RFW (A)	INCORRECT RFW (B)	MISSED EVENTS (C)	POD A/(A+C)	CSI A/(A+B+C)	FAR (1-[A/(A+B)])
601	0	0	0	0	0	0	0
602	1	1	0	1	.50	.50	0
603	0	0	0	0	0	0	0
605	2	2	0	0	1.00	1.00	0
606	2	1	1	0	1.00	.50	.50
607	3	3	0	0	1.00	1.00	0
608	3	3	0	0	1.00	1.00	.50
660	2	0	2	0	0	0	1.00
609	1	1	0	1	.50	.50	0
610	1	1	0	0	1.00	1.00	0
TOT.	15	12	3	2	.86	.71	.20

DRY LIGHTNING WARNINGS:	7	POD=1.00	CSI=0.86	FAR=0.14
WIND/LOW RH WARNINGS:	8	POD=0.83	CSI=0.56	FAR=0.38

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

Average lead times were not calculated, but will be incorporated into the 2002 statistics. A "dry" lightning warning is very difficult to verify. Better objective methods should be in use for 2002.

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IMET DISPATCHES

The 2001 fire season was not as severe as the 2000 season. However, Oregon and Washington had several project fires, mainly in late July through August. The Portland IMET's handled three (3) dispatches, one of which occurred in November.

1. SPRUCE DOME FIRE (9 DAYS)

IMET: Scott Weishaar

DATES: August 16 through August 24

LOCATION: Wenatchee National Forest. Near Rimrock (Highway 12).

COMMAND TEAM: Washington DNR (Type II). Elevated to Type I (Northern Rockies) on the 20th.

CAUSE: Lightning.

2. VIRGINIA LAKES COMPLEX (12 DAYS)

IMET: John Saltenberger

DATES: August 27 through September 8

LOCATION: Okanogan National Forest.

COMMAND TEAM: PAC NW Type I. Transitioned to Washington DNR/FEMA team.

CAUSE: Lightning.

3. GLASS MINES FIRE (10 DAYS)

IMET: John Saltenberger

DATES: November 12 through 21.

LOCATION: Chatahoochie National Forest.

COMMAND TEAM: California Interagency Type I.

PORTLAND FIRE WEATHER - 2001 ANNUAL REPORT

2001 MAJOR FIRES

The Portland Fire Weather district experienced six (6) "large" fires during the 2001 season (***see Table 6***). A large fire is defined as:

100 acres or more in forest or 300 acres or more for rangeland, or a Type II command level.

TABLE SIX

FIRE	DATE	UNIT	CAUSE	SIZE (acres)	CONTROL
Sunnyside	July 5	Warm Springs BIA	Human	368	July 6
Bald Peter	July 12	Warm Springs BIA	Lightning	1600	July 19
Crane Complex	August 12	Deschutes N.F.	Lightning	720	August 25
Olallie Complex	August 12	Mt. Hood N.F.	Lightning	2719	August 29
Goodnoe Hills	August 18	Washington Fire Service	Human	11,526	August 21
Salt Creek	September 15	Gifford Pinchot N.F.	Lightning	316	September 18

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ACKNOWLEDGEMENTS

Several individuals provided assistance in preparing this document. A big thank you goes to Terry Marsha, GACC Meteorologist, for providing the RAWs data base, enormous assistance in helping to prepare this summary, and software guidance. The Predictive Services Division of the GACC provided the 1000-hour fuel moisture values and detailed information on major fires. Thanks to Sara Timm, NWSFO Portland Meteorologist Intern, and Dean Sondag, NWSFO Portland HMT, for their proofreading efforts. Additional thanks goes to Steve Todd, MIC, for providing extra time to prepare this summary.